

REMARKS

Favorable reconsideration of this application in view of the foregoing amendments and remarks to follow are respectfully requested.

On May 29, 2007, Applicants submitted a notice of appeal with an accompanying pre-appeal brief regarding prosecution of the instant application. Subsequently, the Examiner issued an Office Action on June 18, 2007, in which none of the previously cited references were cited and, in which claim rejections are based solely on newly cited references. Given the contents of the present Office Action and the absence of the Examiner's explicit statement on the merits of Applicants' arguments in the pre-appeal brief, Applicants presume that Applicants' arguments were meritorious and convincing. Applicants request an explicit statement from the Examiner if this was not the case.

In this Response, Applicants have amended Claim 1 in the manner indicated supra. Specifically, Applicants have amended Claim 1 to include *a shallow trench isolation region located in said semiconductor substrate, an etch stop layer located directly on said shallow trench isolation region, a metal resistor comprising and located directly on and above said etch stop layer, and a dielectric material portion located directly on and above said metal resistor, wherein first sidewalls of said metal resistor and second sidewalls of said dielectric material portion are vertically coincident and said first sidewalls are directly adjoined to and located directly above said second sidewalls*. Support for the above amendments to Claim 1 is found in FIGS. 1A-1F and accompanying paragraphs of U.S. Patent Application Publication No. 2006/0027878 ("878 publication" hereafter), which is a publication of the instant application. Specifically, the shallow trench isolation is supported by paragraphs [0043] and [0046] of the '878 publication. The etch stop layer located directly on the shallow trench isolation region is

supported by paragraphs [0049]-[0051] of the '878 publication. The metal resistor located directly on and above the etch stop layer and a dielectric material portion located directly on and above the metal resistor are supported by FIGS. 1E and 1F and as inherent consequences of the manufacturing process described in paragraphs [0052] and [0058]. The geometrical configuration in which first sidewalls of said metal resistor and second sidewalls of said dielectric material portion are vertically coincident and said first sidewalls are directly adjoined to and located directly above said second sidewalls is also supported by FIGS. 1E and 1F and as an inherent consequence of the manufacturing process described in paragraphs [0052] and [0058].

Claims 2, 6, and 8 have been cancelled since the features of Claim 2, 6, and 8 have been incorporated into Claim 1, as currently amended.

Applicants have added new Claims 41-51.

Claim 41, which positively states that a periphery of a first cross-sectional area enclosed by the first sidewalls of the metal resistor and a periphery of a second horizontal cross-sectional area enclosed by the second sidewalls of the dielectric material portion are congruent, is supported by paragraphs [0052]-[0058]. Applicants further submit that such congruence of the peripheries is a natural consequence of the processes described therein.

Claim 42 is supported by FIGS. 2A-2F and accompanying paragraphs. Specifically, a semiconductor substrate is supported by FIGS. 2A-2F and paragraph [0062] of the '878 application. A planarized dielectric material portion having a substantially planar horizontal top surface and located on the semiconductor substrate is supported by FIGS. 2B-2F and paragraph [0063] of the '878 application. At least one front-end-of-the-line (FEOL) device located on a surface of the semiconductor substrate and beneath the planarized dielectric material portion is supported by FIGS. 2A-2F and paragraph [0062] of the '878 application. A metal resistor

comprising at least a conductive metal and located directly on and above the planarized dielectric material portion and a dielectric material portion located directly on and above the metal resistor are supported by FIGS. 2E and 2F and are an inherent consequence of the manufacturing process described in paragraphs [0064]-[0066] of the '878 application. The geometrical configuration in which first sidewalls of the metal resistor and second sidewalls of the dielectric material portion are vertically coincident and the first sidewalls are directly adjoined to and located directly above the second sidewalls is also supported by FIGS. 2E and 2F and are an inherent consequence of the manufacturing process described in paragraphs [0064]-[0066] of the '878 application.

Claims 43-45 are supported by Claims 3, 5, 7, and 9 in combination with Claim 1 prior to the present amendments and accompanying paragraphs of the instant application. Claim 46, which positively states that a periphery of a first cross-sectional area enclosed by the first sidewalls of the metal resistor and a periphery of a second horizontal cross-sectional area enclosed by the second sidewalls of said dielectric material portion are congruent, is supported by paragraphs [0064]-[0066] since such congruence of the peripheries is a natural consequence of the processes described therein.

Claim 47 is supported by FIGS. 3A-3F and accompanying paragraphs. Specifically, a semiconductor substrate is supported by FIGS. 3A-3F and paragraph [0068] of the '878 application. A planarized dielectric material portion having a substantially planar horizontal top surface and located on the semiconductor substrate is supported by FIGS. 3A-3F and paragraph [0068] of the '878 application. At least one front-end-of-the-line device located on a surface of the semiconductor substrate and beneath the planarized dielectric material portion is supported by FIGS. 3A-3F and paragraph [0068] of the '878 application. A metal resistor comprising at least a conductive metal and located directly on and above the planarized dielectric material portion and a dielectric material portion located directly on and above the metal resistor are

supported by FIGS. 3E and 3F and are an inherent consequence of the manufacturing process described in paragraphs [0069]-[0074] of the '878 application. The geometrical configuration in which first sidewalls of the metal resistor and second sidewalls of the dielectric material portion are vertically coincident and the first sidewalls are directly adjoined to and located directly above the second sidewalls is also supported by FIGS. 3E and 3F and are an inherent consequence of the manufacturing process described in paragraphs [0069]-[0074] of the '878 application. Claims 48-50 are supported by Claims 3, 5, 7, and 9 in combination with Claim 1 prior to the present amendments and accompanying paragraphs of the instant application. Claim 51, which positively states that a periphery of a first cross-sectional area enclosed by the first sidewalls of the metal resistor and a periphery of a second horizontal cross-sectional area enclosed by the second sidewalls of the dielectric material portion are congruent, is supported by paragraphs [0069]-[0074] since such congruence of the peripheries is a natural consequence of the processes described therein.

Since all elements of the amendments are supported by the specification, entry of the amendments is respectfully requested.

In the outstanding Office Action, Claims 1-10 stand rejected under 35 U.S.C. § 103 as allegedly unpatentable over U.S. Patent Application Publication No. 2003/0047782 to Hasegawa et al. ("Hasegawa" hereafter) in view of U.S. Patent Application Publication No. 2002/0055221 to Kurokawa et al. ("Kurokawa" hereafter).

With respect to the obviousness rejection, Applicants submit that the combined disclosures of Hasegawa and Kurokawa do not render the structure of Claim 1, as currently amended, obvious since the applied references do not teach or suggest, among other elements, *a dielectric material portion located directly on and above a metal resistor, wherein first sidewalls*

of the metal resistor and second sidewalls of the dielectric material portion are vertically coincident and the first sidewalls are directly adjoined to and located directly above the second sidewalls.

Applicants observe that there is no teaching or suggestion in Hasegawa for a dielectric material portion located directly on and above a metal resistor, let alone a dielectric material portion having sidewalls. Further, there is no teaching or suggestion in the applied reference that sidewalls of the dielectric material portion are vertically coincident with sidewalls of a metal resistor. *A fortiori*, there is no teaching or suggestion that the sidewalls of the dielectric material portion are directly adjoined to and located directly above the sidewalls of the metal resistor. Applicants observe that for one group of sidewalls to be directly adjoined to and located directly above another group of sidewalls, it is necessary that both groups of sidewalls to exist. Hasegawa is silent on a dielectric material portion that may be located above a metal resistor, and thus cannot teach or suggest *a dielectric material portion located directly on and above a metal resistor, wherein first sidewalls of the metal resistor and second sidewalls of the dielectric material portion are vertically coincident and the first sidewalls are directly adjoined to and located directly above the second sidewalls.*

The above defect is not alleviated by Kurokawa since Kurokawa does disclose a metal resistor. In the absence of a metal resistor, sidewalls of a metal resistor cannot exist, and thus, cannot be taught or suggested. In the absence of sidewalls of metal resistor, sidewalls of a dielectric material portion that are vertically coincident of sidewalls of the metal resistor cannot exist, and thus, cannot be taught or suggested.

The § 103 rejection also fails because there is no motivation in the applied references which suggests modifying the disclosed structures to include the various elements recited in the claims of the present invention. Thus, there is no motivation provided in the applied references,

or otherwise of record, to make the modification mentioned above. "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Vaeck, 947 F.2d, 488, 493, 20 USPQ 2d. 1438, 1442 (Fed.Cir. 1991).

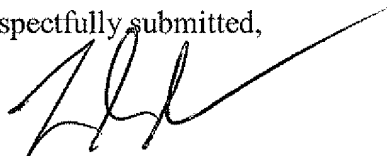
Since the combination of Hasegawa and Kurokawa does not render Claim 1, as currently amended, obvious, Claims 3, 4, 5, 7, 9, and 10, which depend from Claim 1, are not rendered obvious by the combination of Hasegawa and Kurokawa.

The rejection under 35 U.S.C. § 103 has been obviated; therefore reconsideration and withdrawal thereof are respectfully requested.

After reviewing the art that the Examiner cited in the prior rejections, Applicants observe that new Claims 41 - 51 are not disclosed, taught or suggested in the combination of the applied references. Specifically, Applicants observe that none of the cited prior art references teach or suggest, among other elements, *a dielectric material portion located directly on and above a metal resistor, wherein first sidewalls of the metal resistor and second sidewalls of the dielectric material portion are vertically coincident and the first sidewalls are directly adjoined to and located directly above the second sidewalls*. Applicants submit that the newly added claims are patentable over the applied references of record.

Thus, in view of the foregoing amendments and remarks, it is firmly believed that the present case is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'LS Szivos', written over a horizontal line.

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